

# UTAH CTE SKILL CERTIFICATION

## AUTOMOTIVE SERVICE TECHNICIAN

### STUDENT PERFORMANCE EVALUATION

### BRAKES

Student Name: \_\_\_\_\_

The performance evaluation is a required component of the Skill Certification process. Each student **must be evaluated** on the required performance standards. Performance standards may be completed and **evaluated anytime during the course**.

- Students should be aware of their progress throughout the course, so that they can concentrate on the objectives that need improvement.
- Students should be encouraged to repeat the objectives until they have performed at a minimum of a number 1 or 2 on the rating scale (moderately to highly competent level).
  - 1= highly competent      Successfully demonstrated without supervision
  - 2= moderately competent      Successfully demonstrated with limited supervision
  - 3= limited competence      Demonstrated with close supervision
  - 4= not competent      Demonstration requires direct instruction and supervision
- When a standard has been achieved at a minimum of 80% (moderately to highly competent level). "Y" (Y=YES) is recorded on the last line of that standard, on the performance evaluation sheet. If a student does not achieve a 1 or a 2 (moderately to highly competent level), then "N" (N=NO) is recorded on the last line of that standard.
- All performance standards **MUST** be completed and evaluated prior to the written test.
- The **teacher** will bubble in "A" on the answer sheet for item #81 for students who have achieved "Y" on **ALL** performance standards.
- The **teacher** will bubble in "B" on the answer sheet for item #81 for students who have **ONE or more "N's"** on the performance standards.
- The signed performance evaluation sheet(s) **MUST** be kept in the teachers' file for two years.
- A copy is also kept on file with the school's ATE Skill Certification testing coordinator for two years.

Students who achieve a 1 or a 2 (moderately to highly competent) on **ALL** performance standards and 80% on the written test will be issued an ATE Skill Certificate.

470604-01 Students will be able to understand general shop safety		1	2	3	4
	Pass the safety test with a score of 100%.				
	Identify the different types and hazards of solvents used in automotive.				
	Identify the different types, purposes, and hazards of automotive greases, oils, and additives.				
	Identify precautions in the use, handling, and storage of various automotive solvents, cleaners, oils, greases, and additives.				
	Identify the gasses encountered in the automotive field and the hazards they present.				
	Identify the hazards and control of asbestos dust.				
	Comply with safety rules for working with automotive chemicals (MSDS).				

470604-01 Students will be able to understand general brake systems diagnosis.		1	2	3	4
	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. P-1				
	Identify and interpret brake system concern; determine necessary action. P-1				
	Research applicable vehicle and service information, such as brake system operation, vehicle service history, service precautions, and technical service bulletins. P-1				
	Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, calibration decals). P-1				

470604- Students will be able to understand, identify, and properly diagnosis and repair hydraulic system problems.		1	2	3	4
	Diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law). P-1				
	Measure brake pedal height; determine necessary action. P-2				
	Check master cylinder for internal and external leaks and proper operation; determine necessary action. P-2				
	Remove, bench bleed, and reinstall master cylinder. P-1				
	Diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system; determine necessary action. P-1				
	Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging or wear; tighten loose fittings and supports; determine necessary action. P-2				
	Inspect flexible brake hoses for leaks, kinks, cracks, bulging or wear; tighten loose fittings and supports. P-2				
	Fabricate and/or install brake lines (double flare and ISO types); replace hoses, fittings, and supports as needed. P-2				
	Select, handle, store, and fill brake fluids to proper level. P-1				
	Inspect, test, and/or replace metering (hold-off), proportioning (balance), pressure differential, and combination valves. P-2				
	Inspect, test, and adjust height (load) sensing proportioning valve. P-3				
	Inspect, test, and/or replace components of brake warning light system. P-2				
	Bleed (manual, pressure, vacuum or surge) brake system. P-1				
	Flush hydraulic system. P-3				

470604- Students will be able to understand, identify, and properly diagnosis and repair drum brakes.		1	2	3	4
	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action. P-1				
	Remove, clean (using proper safety procedures), inspect, and measure brake drums; determine necessary action.. P-1				
	Refinish brake drum. P-1				
	Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble. P-1				
	Remove and reinstall wheel cylinders. P-2				
	Pre-adjust brake shoes and parking brake before installing brake drums or drum/hub assemblies and wheel bearings. P-1				
	Install wheel, torque lug nuts, and make final checks and adjustments. P-1				

470604- Students will be able to understand, identify, and properly diagnosis and repair disc brakes.				
	1	2	3	4
	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action. P-1			
	Remove caliper assembly from mountings; clean and inspect for leaks and damage to caliper housing; determine necessary action. P-1			
	Clean and inspect caliper mounting and slides for wear and damage; determine necessary action. P-1			
	Remove, clean, and inspect pads and retaining hardware; determine necessary action. P-1			
	Disassemble and clean caliper assembly; inspect parts for wear, rust, scoring, and damage; replace seal, boot, and damaged or worn parts. P-2			
	Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads, and inspect for leaks. P-1			
	Clean, inspect, and measure rotor with a dial indicator and a micrometer; follow manufacturer’s recommendations in determining need to machine or replace. P-1			
	Remove and reinstall rotor. P-1			
	Refinish rotor on vehicle .P-1			
	Refinish rotor off vehicle. P-1			
	Adjust calipers equipped with an integrated parking brake system. P-3			
	Install wheel, torque lug nuts, and make final checks and adjustments. P-1			

470604- Students will be able to understand, identify, and properly diagnosis and repair power assist units.				
	1	2	3	4
	Test pedal free travel with and without engine running; check power assist operation. P-2			
	Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster. P-2			
	Inspect the vacuum-type power booster unit for vacuum leaks; inspect the check valve for proper operation; determine necessary action. P-2			
	Inspect and test hydraulically assisted power brake system for leaks and proper operation; determine necessary action. P-3			
	Measure and adjust master cylinder pushrod length. P-3			

470604- Students will be able to understand, identify, and properly diagnosis and repair miscellaneous (wheel bearings, parking brakes, electrical, etc.)				
	1	2	3	4
	Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine necessary action. P-1			
	Remove, clean, inspect, repack, and install wheel bearings and replace seals; install hub and adjust wheel bearings. P-1			
	Check parking brake cables and components for wear, rusting, binding, and corrosion; clean, lubricate, or replace as needed. P-1			
	Check parking brake operation; determine necessary action. P-2			
	Check operation of parking brake indicator light system. P-3			
	Check operation of brake stop light system; determine necessary action. P-1			
	Replace wheel bearing and race. P-1			
	Inspect and replace wheel studs. P-1			
	Remove and reinstall sealed wheel bearing assembly. P-2			

470604- Students will be able to understand, identify, and properly diagnosis anti-lock brake system				
	1	2	3	4
	Identify and inspect antilock brake system (ABS) components; determine necessary action. P-1			
	Diagnose poor stopping, wheel lock-up, abnormal pedal feel or pulsation, and noise concerns caused by the antilock brake system (ABS); determine necessary action. P-2			
	Diagnose antilock brake system (ABS) electronic control(s) and components using self-diagnosis and/or recommended test equipment; determine necessary action. P-1			
	Depressurize high-pressure components of the antilock brake system (ABS). P-3			
	Bleed the antilock brake system’s (ABS) front and rear hydraulic circuits. P-2			
	Remove and install antilock brake system (ABS) electrical/electronic and hydraulic components. P-3			
	Test, diagnose and service ABS speed sensors, toothed ring (tone wheel), and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO) (includes output signal, resistance, shorts to voltage/ground, and frequency data). P-1			
	Diagnose antilock brake system (ABS) braking concerns caused by vehicle modifications (tire size, curb height, final drive ratio, etc.). P-3			
	Identify traction control/vehicle stability control system components. P-3			

470604-09 Students will be able to understand the importance of employability and work habits.				
	1	2	3	4
	Integrity			
	Punctuality			
	Staying on task			
	Productive team worker			
	Leadership			

**The instructor must retain a copy of this Student Performance Evaluation for two years after the student has left the program.**

Instructor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date : \_\_\_\_\_

School: \_\_\_\_\_